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Global Climate Policies, Local Institutions and Food Security in a Pastoral Society in Ethiopia

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Abstract

This paper explores climate change adaptation within national policy priorities in a least developed country (LDC). The premise of the article is that when considering food security, climate is an exogenous trigger, while the deeper causes lie in social problems. Therefore, adaptation is subordinate to poverty alleviation. The paper examines how these two goals, climate adaptation and poverty alleviation, can be combined. Recent studies have shown that the most effective way to adapt to changing climate conditions in a poor country is to rely on local institutions that have established sustainable mechanisms to deal with extreme climatic conditions.

This research analyzes the stakeholder model, which calls for the participation of both governmental and non-governmental institutions, and how it is applied to climate change adaptation activities in Ethiopia. The study includes field research to analyze how local institutions are used to strengthen the resilience of communities in changing climate conditions. This research was carried out among pastoral communities in the Borana Zone and in the lowland areas of the Guji Zone in the Oromia Regional State of Ethiopia. The central methods of the study are semi-structured interviews with key stakeholders as well as secondary materials in the form of of policy statements, project documents and research literature. This research concludes that local institutions are poorly integrated into the process, while traditional adaptation strategies such as mobility are practically neglected.

Keywords: LDC, stakeholder model, climate adaptation, poverty alleviation.

1. Introduction

This research explores how global climate policies are articulated within national policy priorities in Ethiopia, which shares many common features with other least developed countries (LDCs) in Africa. The focus of the study is on pastoral communities, which have been adversely affected by climate change, which is generally expected to hit developing countries harder than industrialized countries.

This results since LDCs are less capable of mitigating or adapting to climatic changes due to poverty and high dependence on the environment for subsistence (UNDP, 2007). Recent research indicates, however, that in most cases of livelihood failure, climate is an exogenous trigger, while the deeper causes lie in social problems. The extent of the impact of climate change is determined by both the dependency of a national economy on climate-sensitive natural resources as well as the robustness or resilience of its social institutions to secure an equitable distribution in the face of such change (Barnett and Adger, 2007). Adaptation to climate change can be considered successful if it reduces the vulnerability of poor populations to existing climate variability while also strengthening their potential to anticipate and react to further changes (IGAD, 2007; UNDP, 2007).

In Ethiopia, pastoralism provides the main livelihood for close to 15 million people spread across seven regions of the country. Affected by unpredictable climatic conditions, recurrent conflicts and a generally inhospitable environment, the pastoralists are among the poorest of the poor in terms of disposable income, access to social services and general welfare. Human development indicators and poverty rates among pastoralists are uniformly worse than non-pastoralists in Ethiopia. Health coverage is sparse, with only 10 percent of the population immunized and more than 90 percent living in malaria-infested areas. In terms of education, both primary and secondary levels of enrolment remain at 20 percent and three percent, respectively (Bekele, 2008; MoFED, 2006). The upredictable climate, coupled with low levels of human development, mean that the expected effects of climate change are likely to exacerbate the problems of development in pastoral regions. These effects include increasing temperatures, a shift in rainfall patterns and distribution, as well as increased frequency of extreme weather events such as droughts and floods (Anderson et al., 2009; Nassef et al., 2009). The local pastoralists have hitherto been able to cope with recurrent droughts through the resilience of their traditional livelihood system, but presently marked signs of crisis are visible. The pastoral modes of sustenance are under excessive – largely externally created – pressure, and the number of people dropping out of the pastoral system has increased considerably (Pantuliano and Wekesa, 2008; Tache and Oba, 2008).

In global climate policies, as defined in international treaties, developed countries play the main role in climate change mitigation and adaptation. Beyond merely limiting their own greenhouse gas emissions, the developed countries have to assist developing countries in adapting to the variable climate conditions. Concerning the latter, however, the question of adaptation is subordinate to poverty alleviation. Recent studies have shown that the most effective way of adapting to changing climate conditions in a poor country is to rely on local institutions, which have well-established and sustainable mechanisms to deal with extreme climate conditions (Agrawal, 2008). In order to allocate assistance at the local level to local institutions, the traditional donor-recipient government model, termed the "shareholder" model, seems inappropriate. Therefore, the donor community is suggesting that a stakeholder model based on broad participation replace the shareholder model for governance in climate change adaptation.

This paper analyzes how donors, the Ethiopian government and non-state actors (including the pastoralists) have prepared to carry out activities relevant for climate adaptation. The research does not explore global and national interfaces and their role in adaptation (i.e. how global ideas and norms are adopted in Ethiopia), but

rather the preparedness of national and local institutions to tackle these issues. This calls for an understanding of the viewpoints of local stakeholders, especially the poorest groups. The study therefore includes field research to examine how local institutions are used to strengthen the resilience of community adaption to changing climate conditions. The field study was carried out among pastoral and semi-pastoral communities in the Borana Zone and in the lowland areas of the Guji Zone in the Oromia Regional State.

The study is based on semi-structured interviews with key stakeholders and secondary material consisting of policy and project documents and research literature. Altogether 64 persons were interviewed, including representatives of the government of Ethiopia at the federal, regional and local levels (27 interviews), representatives of both national and international NGOs and academic institutions (19), bilateral and multilateral donors (9) and local project beneficiaries (9).[1] Interviews were in the format of open-ended informal discussions guided by a brief set of questions and took place in Addis Ababa (41 interviews) and in the field study area (23). Eleven interviewees were women. The interviews were carried out in English or in a local language (Afaan Oromoo or Amharic) between April and October 2009. In the field study area the researchers also visited six small- and medium-scale water projects, which were the sites of the beneficiary interviews.

2. Food Security and Ways of Adaptation

Current estimates indicate that the greatest losses in suitable cropland due to climate change are likely to be in sub-Saharan Africa. The region's dependence on rain-fed agriculture means that production is vulnerable to climatic variability, which can adversely affect food security, human well-being and exports (Schmidhuber and Tubiello, 2007). Just a single climate disaster is capable of stagnating or even reversing the economic growth achieved over a decade. In the arid, semi-arid and dry sub-humid regions of Africa the situation is further complicated by increasing desertification (Cline, 2007; IGAD, 2007). Therefore, the poorest and most food-insecure continent is also expected to suffer the most serious contraction in agricultural incomes, estimated to range from two to eight percent of the agricultural GDP (Schmidhuber and Tubiello, 2007).

According to Arun Agrawal and Nicolas Perrin, the most important impacts of climate change on rural livelihoods include increases in environmental risks, reduction in livelihood opportunities and stresses on existing social institutions (2009, p. 354-55). The basic adaptation strategies can be classified into a set of four analytical types: mobility, storage, diversification and communal pooling. However, market-based exchange can substitute for any of the above adaptation strategies. When adopted, these responses can reduce spatial, temporal, asset-related and/or community-level risks directly, or minimize them by pooling uncorrelated risks associated with different livelihoods. The prospects of adaptation practices depend on institutional arrangements: the propensity of individual households to adopt

1 When used as reference, the categories of interviewees will be identified by A for government staff, B for civil society organizations, C for donor organizations, and D for local beneficiaries.

specific practices depends on their social and economic endowments, social networks and access to resources and power. The effectiveness of adaptation can also be enhanced by external interventions and local collective action. In this study the above classification (summarized in Table 1) is used as a framework for analysing the adaptation practices adopted in Ethiopia.

Successful adaptation to climate change is a highly context-dependent process, and Ethiopia is characterised by particularly high variability in terms of climate, physical geography and population (IGAD, 2007). As observed by the FAO (2003), an important intra-country gap exists in current analyses of food insecurity. The FAO tends to focus on the national level or the individual level, based on calculations of averages derived as ratios of national aggregates or national survey estimates. Important trends may not, however, be fully evident at the national level, emphasising the need for complementary analyses at different sub-national levels. This conception has also been confirmed by recent studies on climate change and food security, which show that while macro-level vulnerability and impact assessments can be beneficial, more detailed analysis is ultimately needed on the regional and local level. This is especially true among the most vulnerable populations, as to allow effective pro-poor targeting (Thornton et al., 2009). Such studies will also facilitate learning from existing local and/or indigenous mechanisms for coping with difficult climatic conditions and recurrent climate shocks (Devereux and Sharp, 2006).

3. Climate Change, Institutions and Participation

In adapting to the variable conditions of climate change, institutional development is critical. Similarly, the effect of increasing climatic volatility and environmental degradation on food security is transmitted through institutions that shape the rules and rights of resource use. Institutions are often overlapping, and operate on various scales, exacerbating or alleviating the adverse effects of climate change, whether directly or indirectly (Barnett and Adger, 2007). Therefore, it is critically important to better understand the role of institutions, if adaptation is to help the most vulnerable social groups, as is required by the current emphasis on poverty alleviation (Agrawal and Perrin, 2009). However, while the adaptation process is predominantly local, its effectiveness depends on both local and extra-local institutions through which incentives for individual and collective action are structured. This is because "institutional arrangements structure risks and sensitivity to climate hazards, facilitate or impede individual and collective responses, and shape the outcomes of such responses" (Agrawal 2008, p. 8).

Different adaptation practises set different requirements for governance. *Mobility* in traditional society is realised through pastoralism, but in a centralised state system it may mean forced migration or wage labour migration, if such economic opportunities exist. To avoid coercive measures for migration in the present context, flexible institutions that respect the viewpoints of local population are necessary. The institutions of a centralised state have better possibilities for infrastructure strategies aimed at poverty alleviation through economic growth with multipurpose adaptation practices of *storage*, *diversification* and *communal pooling*. According to neoliberal policies,

these development strategies may lead to developed *markets,* which are expected to be a central mechanism for dealing with adaptation (Agrawal and Perrin, 2009).

The debate on the inter-linkage between climate change and development has brought new dimensions and colors to the policies of international organizations and to issues of governance. The constant failings of developing countries in their attempts to follow neoliberal economic policies have illustrated that market-based systems do not function adequately without firmly established institutions and regulative systems (Lumley, 1999). The international organizations address the failings of the neoliberal model in development by introducing politico-economic concepts and models for governance, such as the multi-stakeholder (MSH) model. The MSH model is an economic-managerial model for broader civil society participation in governance (Hemmati, 2002). The MSH framework in the development industry contains all the main types of actors: states, international organizations, businesses, and global or local CSOs. Following the established language, the shift from the donor-recipient model suggests a move "from a shareholder model, in which financial contributors (donors) largely dominated, to a stakeholder model, in which the representatives of the affected parties – developing countries, NGOs, civil society organizations, private sector bodies – also play a role in decision making" (World Bank, 2006, p. 13).

In the LDC context, the crucial question is to what extent non-state players and local institutions are involved in adaptation activities. Like most African countries, Ethiopia has a long history of religious and civil society organisations (CSOs), including local savings groups, mutual self-help groups and ethnic-based or regional development associations. Such groups provide support during times of stress and social events such as death or marriage (Berhanu, 2002). Since a devastating famine in 1972-73, the number of international non-governmental organizations (INGOs) has increased significantly, and they have become one of the main food relief and public service providers (Lautze et al., 2009). Currently, the Ethiopian Ministry of Foreign Affairs mentions 14 INGOs that are crucial public service providers in relief and development activities. Due to the decrease in emergency relief, the government has also suggested that INGOs participate in health, education, food security and water supply provision under close government guidance (MFA, 2009).

While the INGO presence in Ethiopia is still relatively small considering the population size and the extent of poverty and food insecurity, the current federal government has taken steps to limit the scope of operation of the CSOs and especially the INGOs. Despite strong and repeated critical statements and appeals by both CSOs and donors highlighted in the interviews, in 2009 the government approved a new CSO law that bans domestic NGOs from receiving more than 10 percent of their income from foreign sources. Otherwise they are considered 'foreign organizations,' and, like INGOs, are not allowed to participate in any activity deemed political by the government. Due to the extremely wide range of issues (but excluding the environment) included under this definition, including anything from women's rights to democratisation, the new law is especially problematic for the large number of NGOs. This includes most NGOs working with pastoralists, which have adopted rights-based approaches and engaged in advocacy work. By equating policy advocacy with politics, the government seeks to confine NGO activity strictly to service delivery under its supervision. The few national NGOs with sufficient means

Class of adaptation	Corresponding strategies
Mobility	Pastoralism, wage labour migration, involuntary migration
Storage	Water storage, food storage (crops, seeds, forest products), animal storage, pest control
Diversification	Asset portfolio diversification, skills and occupational diversification, skills and occupational training, occupational diversification, crop choices, production technologies, consumption choices, animal breeding
Communal pooling	Forestry, infrastructure development, information gathering, disaster preparation
Market exchange	Improved market access, insurance provision, new product sales, seeds, animal and other input purchases

Table 1. Major Classes of Adaptation Practices (Agrawal & Perrin, 2009, p. 358).

for independent action are intimately linked to the ruling coalition (Interviews, B and C, cf. Lautze et al., 2009).

4. International Support to Adaptation: The NAPA in Ethiopia

The Global Environmental Facility (GEF), which is the main funding mechanism for climate change activities, operates with different funding instruments to support climate change mitigation and/or adaptation in developing countries. The Least Developed Countries Fund (LDCF), which is the main channel for supporting adaptation, has relatively limited assets of USD 172 million (DESA, 2009).

There is considerable criticism, mainly from developing countries and INGOs, with respect to the GEF funds in terms of adequacy and accessibility. The assets of the LDCF are barely sufficient for national planning. Another problem relates to the additionality criteria: the LDCF's assets are intended for building resilience to change in a narrow sense, as distinct from more general climatic variability. In concrete projects it has proved particularly difficult to distinguish the adaptation component (to be funded from UNFCCC sources) from more general resilience building and development activities (to be funded from government budgets and/or ODA). With a very low funding capacity of its own, the offer to fund only the adaptation part becomes futile unless other external sources can be identified (Ayers and Huq, 2009).

Under the LDCF, the projects concerned with adaptation are promoted by the National Adaptation Programmes of Action (NAPA), which the LDCs introduced into the UNFCCC process in 2001. A major share of adaptation projects have focused on natural resources-related activities. For example, agriculture, forestry, water conservation, irrigation, the development of infrastructure, and disaster relief. Hence, they underline the development priorities of the LDCs (Agrawal and Perrin, 2009, pp. 363-364).

The NAPA documents emphasise a participatory process involving stakeholders and local communities in the preparation of NAPAs (Huq and Khan

2009, pp. 192-195). However, in contrast to actual instances of adaptation reported to the UNFCCC, most of the NAPA projects appear to be geared to building the capacity of national governments and agencies to coordinate adaptation, increase service provisions, and create infrastructure, rather than to strengthen local actors. According to a recent study, local institutions were incorporated as the focus of adaptation projects in only about 20 percent of the projects analysed. There is also little evidence of consultation and coordination between local and national levels in the description of the projects selected, despite the requirement for widespread consultations as a key part of the production of NAPA documents (Agrawal, 2008).

In Ethiopia, most of the 11 projects selected for high-priority status are emphatically state-centric. Only in three project plans are non-state actors, such as CBOs, NGOs, or water users' associations, mentioned. In three others the nature of the project involves the possibility of the participation of non-state actors (project level and in the content of the project, i.e., markets, environmental conservation/ rehabilitation, etc.). Despite the NAPA guidelines' emphasis on civil society participation in the programme, there is only one NGO representative among the 10 institutions represented in the Ethiopian NAPA Steering Committee. In all 11 projects a federal ministry or other federal agency is indicated as the lead institution.[2]

The high-priority projects[3] focus on the food security, water resources, infrastructure, health ecosystems and insurance sectors. The distribution is rather similar to the general profile of NAPA high-priority projects elsewhere (Agrawal, 2008, pp. 43-44). However, four projects focusing on the three first-mentioned sectors amount to 738 million USD, or 96 percent of the total investments estimated at 770 million USD. In fact, one project designed for the southern pastoral and agro-pastoral region, 'Realizing food security through a multi-purpose large-scale water development project in the Genale-Dawa Basin,' covers 91 percent of all funds budgeted for the Ethiopian NAPA projects, with a total budget of 700 million USD (UNFCCC; Tadege, 2007).

The Genale-Dawa undertaking, which can be considered the flagship, is a large-scale infrastructure project combining the development of hydropower, irrigation, water supply/sanitation and the upgrading of rural roads. It represents broad economic and social goals over a time-span of 30 years (Tadege, 2007). The project is clearly not a product of stakeholder discussion and participatory planning, but rather reflects broad government-defined economic goals which emphasise export-oriented agricultural production (see e.g. Stokes et al., p. 127-128). Although it is linked with the NAPA process, its roots in the Genale-Dawa River basin integrated development master plan (MoWR, 2007) give it a high position in overall Ethiopian development policies independently of the NAPA linkage. Few of the

2 It was not possible to clarify the role of the local communities and CSOs in the NAPA preparation and appraisal process, as the lists of participants available only include staff from federal institutions. Leading NAPA representatives maintain that ideas and suggestions from the beneficiaries were transmitted adequately through the consultation workshops, but this cannot be verified from independent sources (interviews).

3 The high-priority projects were selected from a group of 37 project options with a total cost of about USD 874 million (Tadege, 2007).

authorities interviewed on the Genale-Dawa project even acknowledged that it is part of the climate change adaptation framework supported by the UNFCCC (interviews, A).

The fieldwork and the interviews proved the almost total invisibility of the NAPA projects in Ethiopia. Some of the major barriers to adaptation gains listed in the national NAPA document include a lack of strong coordination mechanisms, inadequacy of cross-sectoral links, inadequate exchange between the coordinating institution (the National Meteorology Agency, NMA) and plan implementers, and a general lack of capacity. These are exactly the same problems that seem to characterize the current situation. One of the authors of this report visited all five federal ministries or agencies selected as lead institutions for the 11 projects, and it turned out to be extremely difficult to find anybody who was even aware of the NAPA projects.[4] Any additional information beyond the brief descriptions included in the NAPA document was almost impossible to get a hold of. This is mostly because the projects are currently not being implemented or are not even close to the implementation phase. In some cases (such as the Genale-Dawa project), the team was given access to a parallel project document under a different heading. The overall conclusion from this work is that the NAPA projects are an extremely low priority within the government, and have been practically shelved. The funding available from UNFCCC does not allow for their implementation at the present time (interviews, A and C).

There appears to have been no serious attempt to create governance based on the stakeholder model for climate change adaptation in Ethiopia. Proof of authentic grassroots consultations is lacking, as the NAPA document is more a product of the federal development authorities than of climate change realities felt on the ground. Integration of non-state actors has been minimal both on the level of program preparation and in project plans. As such, the focus is on capacity building for government institutions and investment in large-scale projects imposed from above by government technocrats. While government authorities blame the failure to release support funding through the UNFCCC, an equally important reason seems to be a low level of national commitment. At present, the NMA possess neither the institutional authority nor the capacity to monitor regional and local climate change interventions or even to report and analyze the experiences gained (interviews, A; cf. Ayers and Huq, 2009; Brockhaus and Kambiré, 2009). The process is not only state-centric, but moreover almost totally stagnant.

4 It appears that most 'lead institutions' expected to be the forerunners of the process have not accessed and are not familiar with the NAPA document. There is a plan to print 3000 hard copies of the document to be delivered to the relevant institutions in late 2009, i.e., two years after it was submitted to UNFCCC. It would thus appear that NAPA has largely remained a secret of the Steering Committee and a few NMA staff (interviews). A similar situation has been reported from some other African countries (see, e.g., Brockhaus and Kambiré, 2009).

5. Adaptation and Participation on the National Level: The National Food Security Program

In an effort to improve governance in the context of the continued vulnerability aggravated by climate change, the Ethiopian government has sought to agree with the other key actors (mostly donors, but also the private sector and CSOs) on a common approach to food security. These were recorded in the 2002 Food Security Programme (FSP) developed within the framework of the national poverty reduction/development plan. The core objectives of the program reflect the results of a structural analysis: the first objective is to enable the 8.3 million chronically food-insecure Ethiopians to attain food security within a five-year period, and the second is to improve significantly the food security situation of the remaining 6.7 million citizens facing transitory food insecurity (MoFED, 2006).

The most important element in the FSP is a Productive Safety Net Programme (PSNP), which is the largest social protection scheme on the continent outside of South Africa. It commenced in 2005, and has two components: labor-intensive public works and direct support for labor-poor households. The majority of beneficiaries are required to contribute labor to public works, while a further set of criteria are applied to identify those who qualify for safety net support but are not required to participate in public works. Payments to both groups of beneficiaries are provided in cash or food, and in theory each household member is entitled to five days paid work per month (MoFED, 2006; Negatu, 2009). The program's target group consists of people facing predictable food insecurity as a result of poverty rather than temporary shocks (UNDP, 2007). As the government recognizes that small transfers of cash or food are likely to be consumed rather than invested, food security and livelihood promotion are to be achieved primarily through linkages with other modes of support, especially household extension packages intended to generate complementary streams of income. The assets constructed by the public works activities will, on the other hand, contribute to creating a favourable environment for market production rather than direct income generation (Devereux and Guenther, 2009).

Most of the typical public works activities are designed for climate change adaptation. Improving access to drinking and irrigation water is important for storage, while land productivity improvement, soil fertility restoration activities, and increasing fodder availability are relevant for both storage and diversification. Communal land conservation measures, re-forestation, and improvement of school and health facilities are some of the typical communal pooling activities. Finally, market exchange can be improved through construction and/or rehabilitation of roads, bridges, market yards, storage and stock routes. It is interesting to note that none of the typical public works activities highlighted in the implementation manual address the issue of mobility (MoARD, 2006; cf. Agrawal and Perrin, 2009, pp. 357-359).

The relatively effective implementation of the PSNP is based on strong government ownership at the federal and regional level, and coordination between the key donors (Brown and Teshome, 2007). The complex institutional set-up creates considerable pressure for efficient collaboration between very different types of institutions. In theory, the mix of community and administrative targeting used in

the PSNP should help to ensure community participation, ownership and oversight (Sharp et al., 2006). However, while the responsibility for execution has been given to various actors, existing guidelines do not clearly specify the role of the different agencies. Especially at the district level, the planning and implementation capacity is hindered by shortages of staff and skills, along with rapid staff turnover (interviews, A and B; see also Frankenberger et al., 2007; Slater et al., 2006; Negatu, 2009).

During the launch of the PSNP design process, many NGOs complained of being left out, as the government wanted sole ownership of the program (Sharp et al., 2006, p. 10). On the lower administrative level, representation in district-level task forces is limited to line ministries and sometimes NGOs, while ward and community level task forces consist of both elected and *ex officio* members. Civil society is only weakly represented. NGOs are usually included only in those districts where they are official implementing partners, even though they may be key actors providing important resources (Slater et al., 2006, p. 22). In practice, NGO programs frequently substitute for government activities instead of complementing them (interviews, A and B; Frankenberger et al., 2007, p. 6). The interviews indicate that, while the PSNP structure makes possible the engagement of key stakeholders on different levels, accountability is often upward rather than downward (interviews, cf. Sharp & al., 2006, p. 48). The actual power of non-state actors to influence is rather limited on lower administrative levels, though there are considerable differences between individual regional states and local administrative units.

The top-down approach and the weakness of institutional linkages is manifested in the selection and timing of the public works activities implemented under PSNP. Such activities which communities would like to implement are not always given priority (Frankenberger et al., 2007; Slater et al., 2006), while the ownership of community assets created by a public work is often not clear (interviews, A, B and D, cf. Negatu, 2009, p. 18). Local institutions are, however, only seldom recognized by the official safety net system. In some cases, the PSNP soil and water conservation activities have actually usurped communities' initiatives to manage their natural resources (Frankenberger et al., 2007).

In order for the programme to reduce vulnerability, it is crucial that public works do not obstruct the objective of supporting people in achieving improved and self-sufficient livelihoods. Data from different studies show that many beneficiary households were engaged in public works during peak farming periods in most areas (Sharp et al., 2006, p. 41; Slater et al., 2006, p. 34). Female respondents complained that participation in public works reduces significantly the time and energy available for other duties such as caring for children, the elderly, and the sick, or doing agricultural work on their own land (Frankenberger et al., 2007, p. 3). Even outside the peak periods, households with many non-workers, such as children and elderly, are forced to keep children out of school to take care of household livelihoods while the parents are engaged in public works. This has the perverse impact that such households become even more dependent on external support because the work requirement reduces their ability to participate in alternative livelihood activities (Slater et al., 2006, p. 42, 45).

6. Adaptation in a Pastoral Society

6.1 Resilience among the poorest of the poor: nomadic pastoralism in the Borana Plateau

The case study area, which comprises the Borana Zone and lowland areas of the Guji Zone in the Oromia Regional State, is characterized by erratic rainfall pattern between 400 and 700 mm annually. Semi-nomadic pastoralism is the dominant livelihood, although small-scale rain-fed agriculture is becoming increasingly widespread (Desta and Coppock, 2004). Mobility is the basis of the traditional coping strategy, based on opportunistic movements within and across geographically distributed grazing units, which are composed of those households that depend on common permanent water sources. The grazing units consist of semi-sedentary camps where the elderly, women, and children stay with dairy cows. The surplus herd, composed of dry cows, heifers, and male animals, join the mobile herd management unit herded by young men on more remote grazing lands. Rangeland rotation during the wet and dry seasons traditionally prevented overgrazing, while controlled access to water provided the key mechanism for guaranteeing sustainable use of the grazing lands (Angassa and Oba, 2008).

Since the 1970s, various development interventions such as changing the patterns of land use through water development and sedentarization have undermined the survival strategies of pastoralists. Due to internal and external conflicts, the rangelands in Borana and Guji have decreased to about 40 percent of their extent in the 1960s. Currently, the system is subject to severe pressure due to population growth, conflicts over grazing lands, and compression of the livestock population into a much smaller geographical area. The remaining rangelands are threatened by ecological degradation from bush encroachment, land alienation and fragmentation due to the creation of ranches, expanding crop cultivation and the establishment of semi-private range enclosures (Tache and Oba, 2008). This has led to loss of mobility, which implies that the indigenous system of land use can no longer cope with the ecological and climatic variability likely to be amplified by the process of climate change (Desta and Coppock, 2004).

Household data from longitudinal studies over two decades show a decline in cattle holdings, and there is substantial evidence that the Borana are poorer today than they were two decades ago (Desta and Coppock, 2004; Tache and Oba, 2008). Wealth rankings of individual households have shifted towards the poor and destitute households, and a large proportion of the households have fallen below the sustainable economic threshold, likely to drop out of the pastoral system. At present, the poor make up 80 percent of all households, suggesting that the collapse of the whole pastoral production system may be close (Tache and Oba 2008, p. 26). Those who fall out of the pastoral system resort to dryland farming, sale of forest products, crafts, petty trade, casual labour, or food aid. Many of the new subsistence activities of the poor, such as charcoal production and crop cultivation in marginal lands, are ecologically unsustainable and simply deepen the vicious cycle (interviews, A, B and D; see also Coppock, 1994; Morton, 2006).

Increasing population spread over a diminishing land area has swallowed up traditional grazing reserves, which used to maintain stability under recurrent

ecological and conflict-related shocks (interviews, A and B; Homann et al., 2004; Oba, 1998). Combined with few emigration outlets, the degraded natural resource base has led to unsustainable population densities in an inherently risky environment (Desta and Coppock, 2004). Thus, the Borana plateau provides a good example of the complex relationships between increasing climatic stress, declining resource base, and inchoate development policies, where separating climate change adaptation from more general resilience building and development activities is not realistic.

6.2 NAPA initiatives in the case study area

Somewhat surprisingly, mobility is not included among the adaptation practices supported through Ethiopian NAPA projects.[5] Among the four projects that are directly relevant for the study area, two seek to address storage and communal pooling, one combines storage with diversification, and one deals with diversification and communal pooling. Three projects focus on alternative livelihoods through the development of irrigation (2 projects) and forestry (1 project). The sole NAPA proposal focusing on livestock development seeks to improve rangeland management. None of the four projects addresses primarily the market exchange issue (Tadege, 2007).

Instead of mobility, the current government's development policy promotes irrigation schemes as incentive for pastoralist sedentarization, which is favoured as a means to reduce resource conflicts and facilitate service delivery (MoFED, 2006; Tache and Sjaastad, 2008). While the arguments are familiar, lessons learned from the previous failures recorded in numerous studies (e.g., Darkoh, 1992; Niamir-Fuller, 1999) seem to have escaped the policymakers' attention. Perhaps the most striking example of the government's strategy for non-pastoral development in the southern lowlands is the flagship NAPA proposal, 'Realizing food security through multi-purpose large-scale water development project in Genale-Dawa Basin.' The planned project, which is expected to contribute to climate change adaptation through poverty reduction and improved food security, entails large-scale irrigation for crop cultivation, securing domestic water supplies, developing water for livestock, and hydro-power generation (Tadege, 2007).

While the interviewed national and zonal authorities were enthusiastic about the gigantic water project, livestock and environmental experts in local administration and NGOs were more concerned over its negative impacts on existing management institutions and subsequent devastation of rangelands. They noted that even though the project may show positive results in the short-term, due to the high evapotranspiration rate and salt content of the soils, salination and other forms of land degradation are likely to become a problem in the mid-term. They also drew attention to the crucial role of management institutions: infrastructure building is only a means for development, not development itself. The means may bring

5 While the absence of mobility is surprising in terms of its widely recognized importance for nomadic pastoralism (see e.g. Nassef et al., 2009; Niamir-Fuller, 2009), mobility is actually very rarely included in officially recorded adaptation practices. This probably reflects inbuilt bias against it in government circles, where it is often viewed as a maladaptation (Agrawal and Perrin 2009, pp. 357-359).

positive or negative results depending on how the resources made available (e.g., water) are used and managed. With regard to alleged active local participation in the identification and planning of the project itself, the experts called this into question, noting that neither they nor representatives of local institutions were consulted or informed beyond a request to provide logistic support. On a more general level, they maintained that agriculture is not sustainable in the region due to unreliable rainfall and poor soil, as well as its negative impact on the long-term viability of pastoralism. Instead, some of the experts recommend focusing on social development and diversification to activities that do not take up more land (interviews, A).

Parallel to sedentarization, the government promotes modernisation of the livestock economy focusing on marketing, veterinary services, improved range management and water development (MoFED, 2006). A recent development plan for the Borena-Guji agro-pastoral zone finds the main constraints to development in inefficient use of the existing natural resource base, market constraints and poor and inaccessible education and health facilities (MoWR, 2007). The same elements are also reflected in the current development activities in the field, albeit mostly implemented by NGOs (interviews, A and B; see also Pantuliano and Wekesa, 2008). Aside from the one project focusing on rangeland resources management and inclusion of water development for livestock in the Genale-Dawa Basin project, these issues are, however, largely neglected in the NAPA projects.

6.3 PSNP in the case study area

For the chronically poor in the study area, famine relief provides the main support mechanism. The first large famine relief operation in Borana was organised in 1973, and since then famine relief in one form or another has been distributed to the region every year (Helland 2001, p. 70-72). Currently famine relief is distributed mainly through the PSNP, where the government has assumed the leading position even though especially in the pastoral areas NGOs retain a major role in actual implementation. In 2009, more than 680,000 people in the Oromia Regional State were estimated to require emergency food assistance. Of these, 66,297 were located in the Borana Zone and 62,875 in the Guji Zone (MoARD, 2009). In Borana the Pastoral PSNP operates mainly through food-for-work (instead of the theoretically preferred cash-for-work), and the labor is used in rangeland development, water development, social infrastructure construction, feeder road construction and improving market facilities. In terms of the major classes for adaptation practices, the activities fall mainly under communal pooling, and secondarily under storage and diversification (dams for irrigation, pest control) as well as market exchange (MoARD, 2007). While "support and recognition of importance of mobility" in pastoral areas is emphasised in the guidelines (Ibid, p. 47), and is used to identify types of support required (e.g., recognition of customary pastoral institutions and land tenure arrangements, improved access to mobile services, improved security and conflict reduction), in practice these issues remain subject to conflicting views.

Currently, different state authorities and aid agencies in Ethiopia are supporting and/or operating a plethora of largely uncoordinated food security modeling, planning, and coordination platforms. These come in the form of networks, programmes, and adaptation funds at the federal, regional, zonal and

Class of adaptation	**No. of projects**	**Implementing agency**	
		NGO or IO	**Government**
Mobility	None	n/a	n/a
Storage	1	None	1
Diversification	2	None	2
Communal pooling	30	30	None
Market exchange	None	n/a	n/a
Communal pooling and diversification	7	6	1
Communal pooling and market exchange	1	1	None

Table 2. Major classes of adaptation practices in the projects in PSNP districts (project data based on Palmer, 2007)

district levels.[6] In many cases collaboration with indigenous institutions is, however, left entirely to NGOs who have taken over much of the concrete work. Local administration does not even have the operational resources needed and has to rely on NGO support for transport, technical expertise and field expenses. For example, due to budget problems some districts do not have a food security plan as they lack resources for implementation. In reality they simply follow what the NGOs plan and implement, and report it upwards. It is often very difficult to differentiate between government and NGO roles in food-for-work projects, as both tend to take credit for individual projects (interviews, A and B; see also Frankenberger et al., 2007).

A recent database of both governmental and non-governmental institutions with programmes engaged in food security, rural livelihoods, health and emergency response activities in PSNP districts lists altogether 41 projects in the seven districts falling within the area of this study.[7] Six of the projects operated in all the districts, 11 projects operated in 2-5 districts, and 24 operated in only one of the districts covered. All three projects implemented by a government institution (Ministry of Agriculture), as well as the major food security project implemented by UN organisations (WFP and UNICEF) were nation-wide (Table 2). Regional level government authorities and FAO jointly implemented one project, while national or international NGOs implemented the remaining 36 projects with funding from international organizations (ADB, WFP, UNICEF, UNFPA), bilateral donors (USAID, CIDA, Norway) or NGOs (Palmer, 2007).

In terms of major classes of adaptation practices, the projects deal mostly with communal pooling (30 projects), sometimes combined with diversification (7 projects). Most of the projects seek to improve service delivery in health and

6 Pantuliano and Wekesa (2008) provide a useful review of the tangled institutional framework for drought management in the pastoral areas of Ethiopia. While local communities have a role in identifying beneficiaries for the PSNP program, the range of possible activities to be implemented through public works, as well as their timing, is largely set from above by the authorities and/or NGO staff (interviews).

7 The districts are Arero, Dire, Liben, Miyo, Moyale, Teltele and Yabelo.

education, access to water and sanitation at the household level, or disaster preparation. The only projects focusing on storage (1) or diversification (2) were implemented by the government (in one case jointly with a UN organisation). The absence of projects directly addressing mobility or market exchange is striking.

6.4 Local institutions and pastoral resilience

Resilience is a characteristic of the local system, and thus the federal government, donors and non-local NGOs can only facilitate the process, not provide a sustainable long-term solution. Nearly every recent study and assessment report addressing the current livelihood crisis in the study area highlights the importance of traditional pastoral institutions in finding and implementing a sustainable solution (e.g., Angassa and Oba, 2004; Homann et al., 2004; Muir, 2007). Collaboration with traditional institutions is also emphasised in recent government policy documents (see, e.g., MoFED, 2006 and 2007).

It should be noted that in Borana society, chronic poverty means both secession from the pastoral production system and loss of pastoral identity (Tache and Oba, 2008). According to a recent study, the level of poverty (measured by herd size) and distance from the nearest urban center are the key explanatory factors for household trust in traditional institutions. The likelihood of trust increases with herd size and distance from an urban center, but it is inversely related to trust in external institutions. The results are consistent with the finding that households with eroded asset status settle in peri-urban areas in search of food aid and non-pastoral opportunities (Berhanu and Fayissa, 2009). The wealthy, when compared with the poor, dominate not only as contributors but also as recipients in traditional cattle distribution networks. Households facing prolonged hardships thus find themselves sloughed off from the network (Tache and Sjaastad, 2008). Overall, the findings point to a bifurcation of Borana society into two parts: a traditional pastoralist part and an impoverished non-pastoral part concentrated in peri-urban areas.

Mobility remains the main indigenous response strategy among the traditional pastoralist part. Currently, it is often combined with diversification of livestock by acquiring more browsers such as camels and goats as an adaptation to changing climate and vegetation composition in the rangelands (interviews, A, B and D; see also Desta and Coppock, 2004; Homann et al., 2004). Since converting crucial dry-season grazing lands to crop lands causes further dislocation of the pastoralists, it is arguably more sustainable for them to buy the grain they need by using cash from livestock sales and non-agricultural livelihoods (Tache and Oba, 2008). Increasing the off-take of livestock through sales is not, however, a realistic option as long as the market prices are so low that the owners prefer to slaughter animals for their own consumption (interviews, B and D; Oba, 1998). Pastoralist communities have also been reported to support certain livelihood-based interventions by NGOs, namely commercial restocking, supplementary feeding, restocking and the construction of feeder roads to improve market access (Pantuliano and Wekesa, 2008). This view was supported in some interviews.

On the other hand, those households who have dropped out of the pastoralist network need viable options to make a sustainable transition to alternative livelihoods. While opportunities for wage labor are currently very limited in the study

area, a number of households living in peri-urban areas indicated that their members participate or are willing to participate in urban labor migration. The migrants are mostly young people from poor households who seek unskilled employment in small rural towns in the region or in Kenya, where this mobility option is well established. The respondents were, however, aware that unskilled labor is not a viable solution to the coming livelihood crisis (Tache and Oba, 2008). As a long-term strategy, they increasingly see the education of their children as an investment for the future (interviews, B and D).

There are some signs that representation of the different pastoral groups in consultative and policy formulation institutions has become stronger and better organized (interviews, A, B and D). Some researchers and NGO staff have reported a good working relationship between local government and indigenous institutions (Anderson et al., 2009; Muir, 2007), even though others refer to deep distrust and sometimes even open conflict (Homann et al., 2004; Tache and Oba, 2008; Tache and Sjaastad, 2008). A few NGOs regularly involve both local government (at ward level) and traditional institutions in their participatory resource management projects in forestry, rangeland and water development (interviews, B). Some of these have reported concrete results in particular areas of operation; for example, preventing forest fires, dismantling private enclosures or re-introducing controlled range burning (Gebru et al., 2007; Muir, 2007). In the half-dozen small-scale water projects visited by two of the authors, there appeared to be relatively good collaboration between indigenous management institutions and local state authorities in the technically simple earth dams and ponds intended for domestic use and small stock, as well as the rehabilitated traditional deep well. In the slightly more complicated earth dam constructed for irrigation purposes (which the team also visited), the blueprint management structure imposed by the Ministry on all agricultural production cooperatives seemed, however, to be experiencing serious problems only a year after the NGO supporting the project had withdrawn (interviews, A, B and D). The findings support the view that support should be directed to improvement of small-scale rain-fed water schemes using relatively simple technologies instead of large-scale irrigation for export crops, which draw land and economic resources from food production (Stokes et al. 2010, p. 127-128).

Despite explicit public commitment to strengthen collaboration between traditional institutions and relevant state organs, the top-down administrative culture remains prevalent within state administration (interviews, A and B). In most cases, the enthusiasm for popular participation and strengthening of local institutions, shown by international NGOs and other key actors including the government, has failed to create efficient relationships of cooperation. Many of those NGOs that were initially committed to work with traditional institutions have reverted to formal government partners, at least in some cases under direct pressure from government authorities. Outsiders mostly make development interventions on behalf of pastoralists, and so-called consultations with local representatives are in many cases events of top-down information dissemination with no real powers conferred on local participants (Helland, 2001; Watson, 2003).

The failure to involve all key actors and establish a political space where they can participate in a meaningful way is partly due to the unequal relationship between the pastoralists and the state authorities. The latter continue to claim hegemony and exclusive jurisdiction in the study area at the expense of indigenous institutions.

Despite the government's self-reliance rhetoric, distribution through food-for-work has transferred responsibility from the indigenous institutions to the food aid organisations, which are not in practice accountable to the beneficiaries (interviews, A and B; cf. Homann et al., 2004; Pantuliano and Wekesa, 2008). Government (and/or NGO) patronage – following the donor-recipient model - has thus become the dominant institution of adaptation to environmental stress for vulnerable pastoralists. The issue is that the process creates even more vulnerability in making destitution and powerlessness the key criteria for accessing crucial subsistence resources.

7. Conclusion

The general idea that adaptation to climate change will take place on the local level is well established in the international community. Similarly, international organisations and donors suggest broad participation of civil society in the projects related to adaptation. The strengthening of local institutions, civil society, and private actors is expected to increase the capacity to carry out adaptation related activities, both traditional and modern, such as mobility and market-based practices. However, in LDCs such as Ethiopia, which are characterised by high incidences of poverty and a low level of food security, adaptation to climate change is seldom a political priority. The key objectives of the political leadership are rather economic growth and maintenance of a secure grip on political power. It is, therefore, not surprising that the interviews show that the ownership of Ethiopia's NAPA is rather weak. The most disturbing aspect of the practically paralyzed program is the low level of civil society and private sector participation in both preparation and envisaged implementation of the selected high-priority projects, which - unfortunately - is not particular to Ethiopia.

In practice, the government is tackling climate change adaptation through national initiatives such as the FSP. In this program, the conditions for participation are somewhat better than in the NAPA process, and at least formally the procedural aspects are more compatible with the MSH model. The FSP enjoys strong government ownership at the federal and regional level and relatively good coordination between the key donors, but suffers from unequal representation of civil society on the lower administrative levels. In practice the program, and particularly the assets constructed by the public works activities under the safety net component, represent the major local level contribution towards climate adaptation in many rural areas.

The weak and essentially subordinate role given to local CSOs, and even representatives of decentralised state administration, is particularly evident in peripheral pastoral areas such as Borana and Guji. In these regions, local institutions are eagerly courted for political support before elections, but otherwise mostly neglected or used as channels to facilitate project implementation with only marginal roles in planning and monitoring. The government's economic policies, which rely on investment in medium and large-scale irrigation projects to produce export crops, exacerbate the problem. While the expected increase in the national GDP can theoretically be used to buy food from abroad, evidence shows that the resulting distribution problems are very difficult to solve equitably when administrative

capacity is weak as in many LDCs, including Ethiopia. At the same time the current policy orientation reinforces the already serious problem of dependency in the pastoral areas.

A key finding with respect to both NAPA and FSP is the insignificant role of local institutions and knowledge in the formal adaptation strategies, particularly on the implementation level. This is rather worrying in the LDC context, which is characterised by high dependency on external funding for public service delivery and weak administrative capacity at lower levels. Instead of building on the diversity of local human and material resources, the programmes seek to transform local societies into a homogeneous mass controllable through its dependency from the centre. One example of this approach is the strong bias against mobility observed in both NAPA and FSP. None of the supported interventions in the case study area focus on strengthening conditions for mobility even though it was identified as a priority strategy by both traditional pastoralists and those sloughed off from the pastoral networks.

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